

**Patent Claims:**

- Sub a1*
1. Method for the elimination of spurious signal components (SS) in an input signal (ES), said method consisting of
    - the characterization, in a signal analysis phase (I), of the spurious signal components (SS) and of the information signal (NS) contained in the input signal (ES), and
    - the determination or generation, in a signal processing phase (II), of the information signal (NS) or estimated information signal (NS') on the basis of the characterization obtained in the signal analysis phase (I),said characterization of the signal components (SS, NS) being performed under utilization at least of auditory-based features ( $M_1$  to  $M_i$ ).
  2. Method as in claim 1, whereby one or several of the following auditory features ( $M_1$  to  $M_i$ ) are used for the characterization of the signal components (NS, SS): Loudness, spectral profile, harmonic structure, common build-up and decay times, coherent amplitude and frequency modulation, coherent phases, interaural runtime and level differences.
  3. Method as in claim 1 or 2, whereby the auditory features ( $M_1$  to  $M_i$ ) are determined in different frequency bands.

4. Method as in one of the claims 1 to 3, whereby the characterization of the signal components (SS, NS) is performed by evaluating the features ( $M_1$  to  $M_j$ ) determined in the signal analysis phase (I), employing the primitive-grouping method.
5. Method as in one of the claims 1 to 3, whereby the characterization of the signal components (SS, NS) is performed by evaluating the features ( $M_1$  to  $M_j$ ) determined in the signal analysis phase (I), employing the scheme-based grouping technique.
6. Method as in claim 5, whereby a hypothesis is established or specified on the nature of the signal component (SS, NS) and is taken into account in the grouping of the identified features ( $M_1$  to  $M_j$ ).
7. Method as in claim 5 or 6, whereby, for the characterization of the signal components (NS, SS), the auditory features and, as applicable, other features ( $M_1$  to  $M_j$ ) are grouped along the principles of the gestalt theory.
8. Method as in one of the claims 1 to 7, whereby the signal components identified as spurious noise components (SS) are suppressed and/or the signal components identified as information signals (NS) or estimated information signals (NS') are amplified.
9. Method as in one of the claims 1 to 8, whereby the information signal (NS) or an estimated information signal (NS') is synthesized in the signal processing phase (II) on the basis of the features ( $M_1$  to  $M_j$ ) detected in the signal analysis phase (I).

10. Method as in one of the claims 1 to 7, whereby, with the aid of an analysis of the harmonic structure in the signal analysis phase (I), different base frequencies of the signal component of the information signal (NS) or of the estimated information signal (NS') are extracted and, with the aid especially of a loudness or LPC analysis, spectral levels of harmonics of these signal components are defined, and on the basis of the spectral levels and the harmonics an information signal for tonal speech components is synthesized.
11. Method as in one of the claims 1 to 7, whereby, with the aid of an analysis of the harmonic structure in the signal analysis phase (I), nontonal signal components of the information signal (NS) or of the estimated information signal (NS') are extracted and, with the aid especially of a loudness or LPC analysis, spectral levels of these signal components are defined, and with the aid of a noise generator an information signal for nontonal speech components is synthesized.
12. Method as in claim 10 or 11, whereby the information signal (NS) and/or the estimated information signal (NS') is amplified.
13. Application of the method per one of the claims 1 to 12 for operating a hearing aid.
14. Hearing aid operating by the method per one of the claims 1 to 12.